



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/529,283	03/25/2005	Zijing Pang	QI.Z 05-1-1	9150
25764 7590 04/29/2009 FAEGRE & BENSON LLP PATENT DOCKETING - INTELLECTUAL PROPERTY 2200 WELLS FARGO CENTER 90 SOUTH SEVENTH STREET MINNEAPOLIS, MN 55402-3901				
EXAMINER PILKINGTON, JAMES				
ART UNIT 3656		PAPER NUMBER		
NOTIFICATION DATE 04/29/2009		DELIVERY MODE ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

e-OfficeActionHNI@faegre.com  
dweiss@faegre.com

### Office Action Summary

**Application No.**

10/529,283

**Applicant(s)**

PANG, ZIJING

**Examiner**

JAMES PILKINGTON

**Art Unit**

3656

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 March 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3 and 5-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3 and 5-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 November 2008 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF/08)  
Paper No(s)/Mail Date 3/23/09
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Prosecution Application***

The RCE filed on 3/23/09 is acceptable and an action on the RCE follows.

#### ***Drawings***

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, an elastic rib cross section being rectangular, groove-shaped, T-shaped, I-shaped or circular (clm 3) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 17 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 17 recites the limitation "the gear body" in line 2. There is insufficient antecedent basis for this limitation in the claim, it should be - the bull gear body- -.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claim 8 is rejected under 35 U.S.C. 102(b) as being anticipated by Widdrington, USP 3,252,349.

Widdrington discloses a device comprising at least two driving units (14 and 15) symmetrically arranged around the driven device (mechanism) for evenly rotating the driven device, wherein each of the driving units (14 and 15) is connected to a frame (13) through an elastic support (11a-11c, everything has an elastic property).

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1, 3 and 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Widdrington, USP 3,252,349 in view of Kiernan, USP 3,407,681 and further in view of CN 99222132.3.

Widdrington discloses an elastic couple rotor turning gear, characterized in that:

- an elastic support (11a, 11b and 11c, everything has an elastic property) is mounted on a frame (13) of a driven device (device is a drive mechanism)
- a casing (11d, 11e and 18a) with a U-shaped cross section being connected to the elastic support (11a, 11b and 11c) for providing an elastic connection between the frame (13) of the driven device and the elastic couple rotor turning gear
- a casing cover (16) being firmly fixed on the casing (on portion 11d)
- a plurality speed reducer (see left and right of Figure 4 within units 14 and 15) and an each with an electric motor (see Figures 9 and 10, discloses that each drive unit can have its own motor 74 or 66) installed evenly or symmetrically positioned at an angle of 180° (see Figure 4)

- each speed reducer having an output shaft (20) of the speed reducer (21/22) extending into the casing (11d, 11e and 18a, extends into portion 18a) under the casing cover (16)
- the output shaft having a pinion gear (19) mounted thereon and meshed with a gear body (teeth on 10) of a bull gear (10) positioned in the casing (11d, 11e and 18a), the bull gear being engaged with a shaft coupling (26) and the shaft coupling being fixed on a rotor of the driven device (26 and 27 make the connection to the load, element providing torque resistance)
- wherein the shaft coupling (26) is of an integral type, and the shaft coupling (26) is connected to the rotor of the driven device through a plurality of radial linkages (27)
- wherein an axial sliding clearance (under gear 10, see space on left of Figure 3) and a radial sliding clearance (the radial side of the gear is connected via a bearing 12 which creates a clearance) are formed between the gear body (teeth of 10) of the bull gear (10) positioned inside the casing and the casing (11d, 11e and 18a)

Widdrington does not disclose that the bull gear and the shaft coupling are connected through keys via a key seat or an upright post, wherein an air clearance is formed between an inner round wall of the bull gear and the shaft coupling, and three screws (15) for adjusting concentricity are evenly distributed along a circumference of the shaft coupling, and wherein the bull gear includes a key seat.

Kiernan teaches a bull gear (2) and a coupling (6) that are connected through keys (pins labeled as 8) via a key seat (hole in 6), wherein an air clearance (between back of 2 and 6) is formed between an inner round wall (back wall) of the bull gear (2) and the shaft coupling (6), and three screws (screws labeled 8) for adjusting concentricity are evenly distributed along a circumference of the shaft coupling and wherein the bull gear (2) includes a key seat (hole for pins and screws 8).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the fixed connection between the shaft coupling and the gear of Widdrington with the keys and screws and key seat coupling of Kiernan since substitution of one attachment with another would achieve the predictable result of connecting the gear to the coupling.

Widdrington in view of Kiernan discloses all of the claimed subject matter as disclosed above.

Widdrington in view of Kiernan does not disclose that the elastic support includes an upper ring and a lower ring, the upper ring being connected to the lower ring through a plurality of elastic ribs and wherein the plurality of elastic ribs are made of an elastic material and rectangular in cross section.

CN 99222132.3 teaches an elastic support which includes an upper ring (to the right of 4 in Figure 1) and a lower ring (to the left of 4 in Figure 1), the upper ring being connected to the lower ring through a plurality of elastic ribs (at 4) and wherein the plurality of elastic ribs are made of an elastic material and rectangular in cross section.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use elastic support of CN99222132.3 in place of the elastic support of Widdrington in view of Kiernan. Substituting the elastic support of Widdrington in view of Kiernan with the rib type elastic support of CN99222132.3 would yield the predictable result of removing rigidity of the device so that it can withstand more of a shock load.

8. Claims 9-13 and 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Widdrington, USP 3,252,349 in view of CN 99222132.3.

Widdrington discloses all of the claimed subject matter as discussed above.

Widdrington further discloses:

- each of the drive units (14 and 15) comprises a pinion gear (19) adapted to mesh with a bull gear body (teeth) of a bull gear (10) connected to the driven device
- each of the drive units comprise a casing (18a, see Figure 3a) and a cover (bottom plate in Figure 3a) forming an enclosure accommodating the pinion gear (19) and the bull gear body (teeth are inside housing to mesh with pinion)
- wherein the bull gear (10) is connected to a rotor (moving part) of the driven device through a shaft coupling (26)
- wherein the casing has a U-shaped cross section (see 18a) and the casing cover (bottom plate) is firmly fixed on the case (18a)



- wherein an axial sliding clearance (under gear 10, see space on left of Figure 3) and a radial sliding clearance (the radial side of the gear is connected via a bearing 12 which creates a clearance) are formed between the bull gear body (teeth) and the casing (bearing and spacing between connecting teeth allows for sliding clearance in both the radial and axial directions)
- wherein two electric motors (39, use of individual motors for each reduction gearing shown in figures 9 and 10), each driving the pinion gear through an output shaft (20) of a speed reducer (gearing forms speed reducer) mounted on the casing cover (bottom plate, motor is arranged on top of the plate)

Widdrington does not disclose that the elastic support includes an upper ring and a lower ring, the upper ring being connected to the lower ring through a plurality of elastic ribs and wherein casing is connected to the upper ring and the lower ring is connected to the frame.

CN 99222132.3 teaches an elastic support which includes an upper ring (to the right of 4 in Figure 1) and a lower ring (to the left of 4 in Figure 1), the upper ring being connected to the lower ring through a plurality of elastic ribs (at 4) and wherein casing (gear/motor unit) is connected to the upper ring and the lower ring is connected to the frame (7/17).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use elastic support of CN99222132.3 in place of the elastic

support of Widdrington. Substituting the elastic support of Widdrington with the rib type elastic support of CN99222132.3 would yield the predictable result of removing rigidity of the device so that it can withstand more of a shock load.

9. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Widdrington, USP 3,252,349 in view of CN 99222132.3 and further in view of Kiernan, USP 3,407,681.

Widdrington in view of CN 99222132.3 discloses all of the claimed subject matter as disclosed above.

Widdrington in view of CN 99222132.3 does not disclose that the bull gear and the shaft coupling are connected through keys via a key seat or an upright post and wherein an air clearance is formed between an inner round wall of the bull gear and the shaft coupling, and three screws (15) for adjusting concentricity are evenly distributed along a circumference of the shaft coupling.

Kiernan teaches a bull gear (2) and a coupling (6) that are connected through keys (pins labeled as 8) via a key seat (hole in 6), and wherein an air clearance (between back of 2 and 6) is formed between an inner round wall (back wall) of the bull gear (2) and the shaft coupling (6), and three screws (screws labeled 8) for adjusting concentricity are evenly distributed along a circumference of the shaft coupling.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the fixed connection between the shaft coupling and the gear of Widdrington in view of CN 99222132.3 with the keys and screws and key seat

coupling of Kiernan since substitution of one attachment with another would achieve the predictable result of connecting the gear to the coupling.

***Response to Arguments***

10. Applicant's arguments filed 3/23/09 have been fully considered but they are not persuasive.

11. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). The prior office action rejected claim 1 with Widdrington in view of Kiernan and further in view of CN992221132.3 and the Applicant only address Widdrington and CN992221132.3.

Also, the Applicant is arguing the term "elastic" and is taking the position that broad meaning for elastic, everything has an elastic property, is not proper in construing of the claim. However, the specification contained no disclosure for what the Applicant intended for the term "elastic" to be defined as in the original filing nor has the Applicant provided any definition for this term. Since everything has an elastic property, see any stress-strain curve below the yield point is the elastic region of the material, as broadly defined Widdrington and CN992221132.3 discloses an elastic connecting member.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAMES PILKINGTON whose telephone number is

(571)272-5052. The examiner can normally be reached on Monday-Friday 8:00AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Ridley can be reached on (571) 272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JAMES PILKINGTON/

Examiner, Art Unit 3656

4/22/09

/Richard WL Ridley/

Supervisory Patent Examiner, Art Unit 3656